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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,180	06/26/2003	Kazuhito Kojima	21776-00033-US2	1499

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EXAMINER	
HARPER, LEON JONATHAN	

ART UNIT	PAPER NUMBER
2166	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,180	KOJIMA ET AL.	
	Examiner	Art Unit	
	Leon J. Harper	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed 6/20/2006 has been entered. Claims 16,19,20,22-24. Claims 25-27 have been added. Accordingly claims 16-27 are pending in this office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16,17,20-23,25-27 rejected under 35 U.S.C. 103(a) as being unpatentable over US 5903893 (hereinafter Kleewein) in view of US 5594898 (hereinafter Dalal).

As for claim 1 Kleewein discloses: table extraction means for extracting one table including columns that store data to be retrieved from a plurality of tables (See figure 1 "if in command causes extraction then the processor of the computer is the extraction means also see column 4 lines 36-38 "In" predicate extracting for merge/join); column exclusion means for excluding columns that store data to be retrieved of the table extracted by said table extraction means and columns on other tables which store the same data contents as data contents of the columns on the extracted table from columns to be extracted in subsequent processing (See column 4 lines 36-39 In procedure excludes all data that is not in the query), and table joining means for creating a virtual table by joining the columns that store data to be retrieved of the tables extracted in turn by said table extraction without being excluded by said column exclusion meansmeans when the processing of said table extraction means and the processing of said column exclusion means have been repeated till all the columns including data to be retrieved are analyzed (See column 6 lines 45-48 "merge join feature").

While Kleewein does not differ substantially from the claimed invention the disclosure of, a virtual table and excluding column that store data to be retrieved of the table extracted by said table extraction means is not necessarily explicit. Dalal however does explicitly disclose a virtual table (See column 1 lines 50-55) and excluding column that store data to be retrieved of the table extracted by said table extraction means (See column 2 lines 45-57). It would have been obvious to an artisan of ordinary skill in the

pertinent art to have incorporated the teaching of Dalal into the system of Kleewein. The modification would have been obvious because applying restrictions means that only the records with certain information are joined and therefore save computations and memory thereby decreasing the amount of run-time for a join operation (See Dalal column 2 lines 35-45).

As for claim 17, the rejection of claim 16 is incorporated, and further Kleewein discloses: wherein said table extraction means extracts one table including a largest number of columns which store data to be retrieved from the plurality of tables (See column 5 lines 40-45).

Claim 20 is a method claim corresponding to the database system of claim 16 and is thus rejected for the same reasons set forth in the rejection of claim 16.

As for claim 21, the rejection of claim 20 is incorporated, and further wherein upon exceeding one table from the plurality of tables, one table including a largest number of columns that store data to be retrieved is extracted (See column 5 lines 40-45).

As for claim 22, the rejection of claim 20 is incorporated, and further Kleewein discloses: wherein data is retrieved from the virtual table created by joining the plurality of tables (See column 4 lines 55- 59).

Claim 23 is a computer readable medium claim corresponding to the database system of claim 16 and is thus rejected for the same reasons set forth in the rejection of claim 16.

Claim 25 is a database system comprising of substantially the same limitations as claim 16 and is thus rejected for the same reasons as set forth in the rejection of claim 16.

As for claim 27 Kleewein discloses: extracting a first table including columns that store data to be retrieved from the plurality of tables (See column 4 lines 25-27, lines 30-45, lines 55-57), extracting a second table including columns that also store data to be retrieved from the plurality of tables (See column 4 lines 25-27, lines 30-45, lines 55-57) creating a virtual table by joining columns of the first second and third extracted tables (See column lines 25-31) excluding, from the created virtual table columns of the second extracted table which duplicates data contents of the first extracted table (See column 7 lines 11-17 note: distinct values) excluding from the created virtual table, columns of the third extracted table which duplicates data contents of either the first or

second extracted table ; searching the virtual table for desired data (See column 7 lines 10-17, 25-31).

While Kleewein does not differ substantially from the claimed invention the disclosure of a virtual table and extracting a third table including columns that also store data to be retrieved from the plurality of tables, and the general teachings of a third table in general are not necessarily explicit. Dalal however does explicitly disclose a virtual table (See column 1 lines 50-55) Moreover, it would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated the teaching of a third table into the system of Kleewein. The modification would have been obvious because Kleewein discloses that a merge join technique requires at least two tables (See column 4 lines 25-30 note: that the starting point is two). Moreover, a two database disclosure is used for explanation purposes, but more than two databases was well within the idea of the Kleewein system, more evidence of this face is the disclosure of 3 database management systems (See column 3 lines 36-40).

As for claim 26 Kleewein discloses: wherein the means for extracting functions until all columnar data in the plural distributed databases has been analyzed.

Claims 18,19,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleewein and Dalal as applied to claim 16 above, and further in view of US 5937 409 (hereinafter Wetherbee).

As for claim 18, the rejection of claim 16 is incorporated, and further Kleewein discloses: joining of the plurality of tables (See column 6 lines 45-48 "merge join feature") and extracting tables (See column 4 lines 35-40). Kleewein differs from the claimed invention in that metadata management means for collecting and managing metadata which pertain to joining of the plurality of tables, and wherein said table extraction means extracts the table on the basis of the metadata stored in said metadata management means are not explicitly indicated. Wetherbee however, discloses a metadata management means for collecting and managing metadata (See column 4 lines 60-64 "relational mapper = metadata management means), and metadata stored in said metadata management means (See column 5 lines 2-5). It would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated the teachings of Wetherbee into the system of Kleewein. The modification would have been obvious because having metadata that describes that objects or information contained in the tables allows the user to store personalized information about the information in the database.

As for claim 19, the rejection of claim 16 is incorporated, and further Kleewein discloses wherein data is retrieved from the virtual table created by joining the tables,

which are extracted in turn and joined by said table extraction means (See column 4 lines 36-39 In procedure also retrieves data based on query).

Kleewein differs from the claimed invention in that retrieval means for retrieving objects in accordance with a retrieval key is not explicitly disclosed. Wetherbee however does disclose retrieval means for retrieving objects in accordance with a retrieval key (See column 9 lines 1-5). It would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated the teachings of Wetherbee into the system of Kleewein. The modification would have been obvious because having a retrieval key allows for faster information retrieval because the user does not have to submit a query when they know which record they want.

As for claim 24, the rejection of claim 23 is incorporated, and further Kleewein discloses wherein said program makes the computer further implement the function of retrieving objects from the virtual table created from the tables extracted and joined by said table extraction means (See column 4 lines 36-39 In procedure also retrieves data based on query).

Kleewein differs from the claimed invention in that retrieval means for retrieving objects in accordance with a retrieval key is not explicitly disclosed. Wetherbee however does disclose retrieval means for retrieving objects in accordance with a retrieval key (See column 9 lines 1-5). It would have been obvious to an artisan of ordinary skill in the

pertinent art to have incorporated the teachings of Wetherbee into the system of Kleewein. The modification would have been obvious because having a retrieval key allows for faster information retrieval because the user does not have to submit a query when they know which record they want.

Response to Arguments

Applicant's arguments filed 6/20/2006 have been fully considered but they are not persuasive.

Applicant Argues:

In contrast to Kleewein, the present operation is for extraction and joining only required data items (i.e. "Low") in tables. It excludes only Low but not column . The present application has a feature that a minimum required number of columns or tables are stored in memory. Specifically , unnecessary columns not used for SQL statement in joined tables and tables including only unnecessary "column are not saved in the memory are not stored in memory.

Examiner Responds:

Examiner is not persuaded. During patent examination, the pending claims must be 'given the broadest reasonable interpretation consistent with the specification.' Applicant always has the opportunity to amend the claims during prosecussion and

broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969).Reference is made to MPEP 2144.01 - Implicit Disclosure "[I]n considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968) Examiner has in response to Applicant's amendments added Dalal as prior art. Examiner also hopes this makes clear the implicit disclosures within Kleewein. Dalal explicitly states that restrictions may be placed on join techniques (See column 2 lines 45-46). Such restrictions are conditions placed on columns of the source table that must be true in order for a row to be included in the join (See column 2 lines 47-49).

Applicant Argues:

Applicant's arguments with respect to claims 16,20,23 are that the applied art does not **create a virtual table** by either joining means for creating a virtual table by joining the column that store data to be retrieved of the tables extracted in turn by said table extraction means or excluding identical data upon search or by joining the tables extracted recited in claims 16,20,23 respectively.

Examiner Responds:

Examiner is not persuaded. Examiner hopes the addition of the Dalal patent makes clear the implicit disclosure of means for creating a virtual table. Dalal teaches that the result table formed by a join operation can either an actual table containing the data from each of the joined rows of the source tables or a virtual table (See column 1 lines 50-55).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon J. Harper whose telephone number is 571-272-0759. The examiner can normally be reached on 7:30AM - 4:00Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T. Alam can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJH
Leon J. Harper
September 5, 2006

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER